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Glossary Terms

Acid rain: Rain with a pH of less than 5.6.

Alkalinity: The property of having excess hydroxide ions in solution. (Dictionary of Scientific and Technical Terms)

Apogee: That point in an earth orbit at which the moon or an artificial satellite is most distant from the earth; the term is sometimes loosely applied to positions of satellites of other planets. (Dictionary of Scientific and Technical Terms)

Aquifer: A permeable body of rock capable of yielding quantities of groundwater to well and springs. [geol] A subsurface zone that yields economically important amounts of water to wells. [hydrol] (Dictionary of Scientific and Technical Terms)

Aerozine-50: A mixture of 50 percent (by weight) hydrazine and 50 percent unsymmetrical dimethylhydrazine. (Hazards of Chemical Rockets and Propellants Vol. I)

Barrier islands: An island similar to an offshore bar but differing from it in having multiple ridges, areas of vegetation, and swampy terraces extending toward the lagoon. A detached portion of an offshore bar between two inlets. (Dictionary of Scientific and Technical Terms)

Bioaccumulation: Progressive increase of the bodily content of a toxic compound.

Brackish: Of water having salinity values ranging from approximately 0.50 to 17.00 parts per thousand. Of water having less salt than seawater, but undrinkable. (Dictionary of Scientific and Technical Terms)

Buffering capacity: The relative ability of a buffer solution to resist pH change upon addition of an acid or a base. (Dictionary of Scientific and Technical Terms)

Carpet Boom: Shock waves produced by an aircraft traveling at supersonic speeds that cover the ground in a parabolic shape, resulting in a sound resembling a short, impulse noise, similar to a double gun shot.

Cation exchange capacity: The sum of exchangeable cations that a soil or other material can adsorb at a specific pH.

Cryogenic: A type of propellant for LV propulsion systems that are gaseous at room temperature and maintained at very low temperatures (e.g., LO_x/LH_2).

Decibel (dB): A unit for describing the ratio of two powers or intensities, or the ratio of a power to a reference power. In the measurement of sound intensity, the pressure of the reference sound is usually taken as 2×10^{-4} dyne per square centimeter (equal to one-tenth bel).

dBA: A unit used to show the relationship between the interfering effect of a noise frequency, or band of noise frequencies, and a reference noise power level of –85 dBM. (Dictionary of Scientific and Technical Terms)

Estuarine wetlands: Wetlands that are continuously submerged or are by turns exposed and flooded by tides.

Expendable launch vehicle (ELV): An ELV is an unmanned space vehicle with the ability to operate in, or place payloads in, outer space and is intended to be used only once.

Flight Hazard Area: Regions of land, sea, and air that are exposed to the potential adverse effects of planned and unplanned launch vehicle flight events and that must be monitored, controlled, or evacuated in order to ensure public safety. The flight hazard area requirements apply to orbital and ballistic launch vehicles that use a flight termination system to protect the public.

Flight profile: A graphic portrayal or plot of the flight path of an aeronautical vehicle in the vertical plane. (Dictionary of Scientific and Technical Terms)

Flight Safety System (FSS): Flight safety system means the system that provides a means of control during flight for preventing a launch vehicle and any component, including any payload, from reaching any populated or other protected area in the event of a launch vehicle failure. A flight safety system includes the hardware and software used to protect the public in the event of a launch vehicle failure and the functions of any flight safety system crew.

Flight Termination System (FTS): Flight termination system means all components, onboard a launch vehicle, that provide the ability to end a launch vehicle's flight in a controlled manner. A flight termination system consists of all command destruct systems, inadvertent separation destruct systems, or other systems or components that are onboard a launch vehicle and used to terminate flight.

Floodplain: The relatively smooth valley floors adjacent to and formed by alluviating rivers, which are subject to overflow. (Dictionary of Scientific and Technical Terms)

Focus Boom: A region of intense overpressure along the most uprange portion of the sonic boom footprint.

Geosynchronous Earth Orbit (GEO): GEO is an orbit 22,300 miles in altitude that is synchronized with Earth's rotation. If a satellite in geosynchronous orbit is not at 0 degrees inclination, its ground path describes a figure eight as it travels around the Earth.

Geosynchronous transfer orbit (GTO): An orbit that originates with a parking orbit and then reaches apogee at the GEO.

Government Range: Government owned property located throughout the U.S. where missiles, rockets, armaments, and new aircraft designs are tested. A government range can include various assets to gather data and monitor and track testing operations. In addition, these lands may be withdrawn or restricted from public use.

Greenhouse gases: The Earth absorbs energy from the sun and radiates this energy back into the atmosphere. The greenhouse gas effect or global warming results when the re-radiated energy is trapped by gases in the atmosphere and warms the Earth's surface and atmosphere. Greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons (CFCs), hydrofluorocarbons, and perfluorinated carbons.

Ground cloud: As an LV gradually accelerates off a launch pad, the emission levels are greater near the ground, forming the 'ground cloud.'

Hertz: A unit of frequency equal to one cycle per second. (Abbreviated Hz)

High payload capacity: LVs with high payload capacity can lift from 9,000 to 10,000 lbs into GTO.

Hybrid propulsion systems/fuels: A propulsion system that uses solid fuel with a liquid oxidizer, giving it the ability to throttle, shut-off, and restart in mid-flight.

Hypergolic: Term applied to describe the self-ignition of a fuel and an oxidizer upon mixing with each other without a spark or other external aid. (Hazards of Chemical Rockets and Propellants Volume II)

Intermediate payload capacity: An LV with intermediate payload capacity is capable of carrying between 4,000 and 9,000 pounds into GTO or more than 5,000 pounds into LEO.

Ion: An isolated electron or positron or an atom or molecule which by loss or gain of one or more electrons has acquired a net electric charge. (Dictionary of Scientific and Technical Terms)

Ionization: A process by which a neutral atom or molecule loses or gains electrons, thereby acquiring a net charge and becoming an ion: occurs as the result of the disassociation of the atoms of a molecule in solution, or of a gas in an electric field. (Dictionary of Scientific and Technical Terms)

Ionosphere: The part of the earth's upper atmosphere which is sufficiently ionized by solar ultraviolet radiation so that the concentration of free electrons affects the propagation of radio waves: its base is at about 70 or 80 kilometers and it extends to an indefinite height. (Dictionary of Scientific and Technical Terms)

Lacustrine wetlands: Wetlands situated in topographic depressions, surrounding lakes or impounded rivers.

Leached: The separation or dissolving out of soluble constituents from a rock or ore body by percolation of water. (Dictionary of Scientific and Technical Terms)

Liquid hydrocarbon fuels: A type of propellant for LV propulsion systems (e.g., RP1).

Low Earth Orbit (LEO): Low Earth orbit (LEO) is a flight path between Earth's atmosphere and the bottom of the Van Allen belts, from about 100 to 1,000 miles altitude.

Mach 1: Speed equal to the local speed of sound.

Magnetosphere: The region of the earth in which the geomagnetic field plays a dominant part in controlling the physical processes that take place; it is usually considered to begin at an altitude of about 100 kilometers and to extend outward to a distant boundary that marks the beginning of interplanetary space. (Dictionary of Scientific and Technical Terms)

Medium payload capacity: An LV with medium payload capacity can place a 2,000 to 4,000 pound payload into GTO.

Mesosphere: The atmospheric shell between about 45-55 kilometers and 80-85 kilometers, extending from the top of the stratosphere to the mesopause; characterized by a temperature that generally decreases with altitude. (Dictionary of Scientific and Technical Terms)

Mixing height: Atmospheric region where pollutants and emissions tend to remain.

Multi-staged rocket: A vehicle having two or more rocket units, each unit firing after the one in back of it has exhausted its propellant: normally, each unit, or stage, is jettisoned after completing its firing. Also known as multiple-stage rocket: step rocket. (Dictionary of Scientific and Technical Terms)

Noise: Sound that is unwanted, either because of its effect on humans, its effect on fatigue or malfunction of physical equipment, or its interference with the perception or detection of other sounds. (Dictionary of Scientific and Technical Terms)

Non-Programmatic: Launches that do not require a license from the Federal Aviation Administration including: U.S. government launches, foreign commercial launches, and foreign government launches.

Organic matter: Relating to, or derived from living organisms.

Overpressure: The local transient pressure, usually expressed in pounds per square inch, exceeding existing atmospheric pressure and manifested in the blast wave from an explosion. (Dictionary of Scientific and Technical Terms)

Oxidizer: A substance such as chlorate, perchlorate, permanganate, peroxide, nitrate, oxide, or the like that yields oxygen readily to support the combustion of organic matter, powdered metals, and other flammable material. (Hazards of Chemical Rockets and Propellants Volume II)

Ozone: Unstable blue gas with pungent odor; an allotropic form of oxygen; a powerful oxidant boiling at –112 C; used as an oxidant, bleach, and water purifier, and to treat industrial wastes. (Abbreviated O_3) (Dictionary of Scientific and Technical Terms)

Ozone Depleting Substances: Substances that can catalyze reactions that break ozone into other compounds. This is an issue of concern particularly in the stratosphere.

Palustrine wetlands: Nontidal wetlands that are nonvegetated, or have emergent or woody vegetation.

Parking orbit: A temporary earth orbit during which the space vehicle is checked out and its trajectory carefully measured to determine the amount and time of increase in velocity required to send it into a final orbit or into space in the desired direction. (Dictionary of Scientific and Technical Terms)

Particulate matter: Matter in the form of small liquid or solid particles. (Dictionary of Scientific and Technical Terms)

Payload: That which an aircraft, rocket, or the like carries over and above what is necessary for the operation of the vehicle in its flight. (Dictionary of Scientific and Technical Terms)

Payload capacity: Payload capacity refers to the number of pounds an LV can lift into a particular orbit, such as LEO or GTO.

Percent base saturation: The extent to which the adsorption complex of a soil is saturated with alkali Earth cations expressed as a percentage of the cation exchange capacity.

pH: A term used to describe the hydrogen-ion activity of a system. A solution of 0 to 7 is acid, pH of 7 is neutral, and a pH from 7 to 14 is alkaline. (Dictionary of Scientific and Technical Terms)

Photolysis: The use of radiant energy to produce chemical changes. (Dictionary of Scientific and Technical Terms)

Plasma: A completely ionized gas, composed entirely of a nearly equal number of positive and negative free charges (positive ions and electrons). (Dictionary of Scientific and Technical Terms)

Programmatic Launches: Launches that require a license from the Federal Aviation Administration.

Propulsion systems: For a vehicle moving in a fluid medium, such as an airplane or ship, a system that produces a required change in momentum in the vehicle by changing the velocity of the air or water passing through the propulsive device or engine; in the case of a rocket-propelled vehicle operating in a fluid medium, the required momentum change is produced by using some of the propulsive device's own mass, called the propellant. (Dictionary of Scientific and Technical Terms)

Protonosphere: The outermost portion of the ionosphere.

Reentry vehicle: A vehicle designed to return from earth orbit or outer space to Earth, or a reusable launch vehicle designed to return from earth orbit or outer space to Earth, substantially intact. 49 U.S.C. § 70101 (13). For purposes of this PEIS, reentry vehicles means those that are not RLVs.

Small payload capacity: LVs with a small payload capacity can launch 2,000 pounds or less into GTO or 5,000 pounds or less into LEO.

Solid rocket motor propellant: A fuel/oxidizer mix that continually combusts when ignited.

Sonic boom: A noise caused by a shock wave that emanates from an aircraft or other object traveling at or above sonic velocity. (Dictionary of Scientific and Technical Terms)

Sound: An alteration of properties of an elastic medium, such as pressure, particle displacement, or density, that propagates through the medium, or a superposition of such alterations; sound waves having frequencies above the audible (sonic) range are termed ultrasonic waves; those with frequencies below the sonic ranges are called infrasonic waves. Also known as acoustic wave, sound wave. (Dictionary of Scientific and Technical Terms)

Stratosphere: The atmospheric shell above the troposphere and below the mesosphere; it extends therefore, from the tropopause to about 55 kilometers, where the temperature begins again to increase with altitude. (Dictionary of Scientific and Technical Terms)

Threshold Limit Value (TLV): The upper values of a toxicant concentration to which an average healthy person may be repeatedly exposed to on day after day without suffering adverse effects. (Hazards of Chemical Rockets and Propellants volume II)

Trajectory: The curve described by an object moving through space. (Dictionary of Scientific and Technical Terms)

Troposphere: The portion of the atmosphere from the earth's surface to the tropopause, that is, the lowest 10 to 20 kilometers of the atmosphere. (Dictionary of Scientific and Technical Terms) It is the turbulent and weather region containing 75% of the total mass of the Earth's atmosphere. It is characterized by decreasing temperature with increasing altitude. The major components of the troposphere are nitrogen (76.9%) and oxygen (20.7%).

Van Allen belts: One of the belts of intense ionizing radiation in space about the earth formed by high-energy charged particles which are trapped by the geomagnetic field. (Dictionary of Scientific and Technical Terms)

Wetlands: Land or areas exhibiting the following characteristics: hydric soil conditions; saturated or inundated soil during some part of the year and plant species tolerant of such conditions; also, areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, under normal circumstances, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Sources:

Hazards of Chemical Rockets and Propellants volume I, II, III, Chemical Propulsion Information Agency, Laurel, MD (September 1984)

Dictionary of Scientific and Technical Terms Second Edition, McGraw-Hill Book Company, New York, NY (1978)

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